



**JOINT BASE CHARLESTON - AIR
ENVIRONMENTAL RESTORATION PROGRAM
NORTH CHARLESTON, SOUTH CAROLINA**



**STATEMENT OF BASIS FOR LONG-TERM GROUNDWATER MONITORING WITH
LAND USE CONTROLS**

**SOLID WASTE MANAGEMENT UNIT 60 (OT011)
HARDFILL AREA NO. 3**

STATEMENT OF BASIS

**Joint Base Charleston-Air
North Charleston, South Carolina**

Facility/Unit Type: Joint Base Charleston-Air (JBCA)/Solid Waste Management Unit (SWMU) 60 (OT011) Hardfill Area No. 3

Contaminants: Metals

Media: Groundwater

Proposed Remedy: Long-Term Groundwater Monitoring (LTM) with Land Use Controls (LUCs)

INTRODUCTION

This Statement of Basis (SoB) proposes LTM with LUCs as the final remedy decision for SWMU 60 (OT011, also referred to as the site). It also provides background information for the site, explains the rationale for proposing LTM with LUCs as the final remedy, and invites the public to comment on this proposal. The South Carolina Department of Health and Environmental Control (SCDHEC) will not finalize this decision until the public comment period has ended and all information submitted during the public comment period has been reviewed and considered.

JBCA (also referred to as the Base) is located in Charleston County, approximately 10 miles northwest of Charleston, South Carolina (see **Figure 1**). JBCA comprises 3,731 acres of contiguous property with a Base population of approximately 8,500.

Air Force Environmental Restoration Program (ERP) Site SWMU 60 (OT011) – Hardfill Area No. 3 is included in the JBCA Resource Conservation and Recovery Act (RCRA) Permit #SC3 570 024 460, dated October 4, 2010 (Permit). A hardfill is characterized as an area used for surface disposal and is different from a landfill as the materials were not buried as part of the disposal process. The Permit, issued by SCDHEC, lists SWMU 60 as requiring a RCRA Facility Investigation (RFI).

SWMU 60 was used as a hardfill from 1960 to 1965. The materials have since been covered with soil and grass. Hardfill materials remain in place and periodic groundwater sampling is conducted so that if any degradation of groundwater quality was to occur due to waste left in place it would be detected and appropriate action would be taken.

This SoB should not be considered the primary source of site information. Documents providing greater site detail are located in the administrative record maintained at JBCA and the SCDHEC office located in Columbia, South Carolina (addresses provided at the conclusion of this document). SCDHEC encourages the public to review these documents to gain a more thorough understanding of the site and the activities that have been conducted. A list of key site-specific documents used to prepare this SoB follows:

- Installation Restoration Program – Phase II, Confirmation/Quantification Stage 1, Charleston Air Force Base, South Carolina, Science Application International Corporation (SAIC), June 1986.
- Installation Restoration Program Draft RCRA Facility Investigation Report for Charleston Air Force Base, South Carolina, Halliburton NUS Corporation, June 1995.
- Phase II RFI Report for Solid Waste Management Units 53, 58, 60, 66, 69, 70, and 71, Charleston Air Force Base, Charleston, South Carolina, Tetra Tech NUS, Inc., August 2007.

- Final Phase III RCRA Facility Investigation Report, SWMU 60 – OT011 –Hardfill Area No. 3, Joint Base Charleston-Air, North Charleston, South Carolina, URS Group, Inc. (URS), June 2015. In a letter dated July 16, 2015, SCDHEC concurred with the recommendation to perform a Focused Corrective Measures Study (CMS) that would serve to further protect human health and the environment. A Focused CMS is normally performed, with regulator concurrence, when the scope of a remedy is very narrow or a presumptive remedy is being evaluated. A presumptive remedy, LTM with LUCs, is being evaluated for SWMU 60.
- Final Focused Corrective Measures Study, SWMU 60 – OT011 – Hardfill Area No. 3, URS, October 2016. In a letter dated December 7, 2016, SCDHEC concurred with LTM with LUCs as the proposed remedy.

PROPOSED REMEDY DECISION

The proposed remedy decision for SWMU 60 is LTM with LUCs, which was selected through a Focused CMS discussed below after the Phase III RFI Report identified manganese and molybdenum as constituents of potential concern (COPCs). The Focused CMS also developed the corrective action objective for SWMU 60: to continue to protect human health and the environment by eliminating or minimizing the potential for exposure to constituents of concern (COCs) in underlying groundwater at concentrations above their respective risk-developed human health screening levels (HHSLs) or by eliminating the exposure pathway. The SCDHEC Bureau of Land and Waste Management, Division of Waste Management, Department of Defense Corrective Action Section concurred with the remedy decision in a letter dated December 7, 2016 (SCDHEC, 2016).

There is no direct citation in the SCDHEC regulations stipulating that periodic groundwater monitoring be conducted for a hardfill site with waste left in place even if the identified COCs do not pose a risk to human health or the environment. The monitoring requirement is implied by the SCDHEC Pollution Control Act (groundwater is to be restored to un-impacted conditions) (South Carolina Law, Title 48, Chapter 1), South Carolina Hazardous Waste Management Regulations (R.61-79), JBCA RCRA Part B Permit, United States Environmental Protection Agency's (USEPA's) Presumptive Remedy for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Landfill Sites (Directive No. 9355.0-49FS), and USEPA's Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills (Directive No. 9355.0-67FS).

SITE DESCRIPTION

SWMU 60, also known as OT011 or Hardfill Area No. 3 (formerly a part of Zone 1), is located in the southern portion of JBCA, southwest of the Secondary Runway (Runway 3-21) (see **Figure 1**). The Zone 1 boundary, approximately 15.8 acres in size, was established by JBCA in 1984 to combine the study of SWMU 60, and two other inactive units, Fire Protection Training Area No. 1 (SWMU 53) and Ash Disposal Area No. 2 (SWMU 71) and to delineate the area of groundwater contamination thought to be associated with these SWMUs. SCDHEC granted SWMUs 53 and 71 no further action (NFA) status in January 2008, with groundwater contamination being addressed under the SWMU 60 site.

A suspected skeet range site, Area of Concern (AOC) Y, is also located near the area of SWMU 60 with parts of each unit overlapping (see **Figure 2**). AOC Y was originally a single 18-acre site in the Military Munitions Response Program (MMRP) but has since been divided into two portions: AOC Y and TS838. Installation Restoration Program (IRP) site SWMU 60 (including SWMUs 71 and 53) overlaps part of the 11.1 acres that comprise the original footprint of AOC Y. The 11.1-acre area is ineligible under the MMRP due to its previous investigation under the IRP. TS838 constitutes the remaining 6.9 acres of the suspected skeet range site. **Figure 2** shows the boundaries of TS838, AOC Y, and SWMU 60. SCDHEC granted No Further Investigation status for TS838 in a letter dated June 24, 2015. The letter further stated that permit modifications for AOC Y and SWMU 60 are to be processed concurrently because a portion of AOC Y overlaps part of SWMU 60. This is to include a notation in the Installation Development Plan that 6.9 acres of the AOC Y site, not co-located with SWMU 60, was identified as a skeet range and that appropriate safety notifications will be passed along prior to any future construction at the site. The 11.1 acre portion of AOC Y co-located with SWMU 60 will be subject to LUCs in the form of a notation in the Installation Development Plan indicating that AOC Y was identified as a skeet range. Additionally, the 11.1 acre portion of AOC Y located within SWMU 60 will also be subject to the LUCs included in the selected remedy for SWMU 60.

SWMU 60, active from 1960 to 1965, was used for surface disposal of concrete, office furniture, empty drums and cans, scrap wood, and coal ash. SWMU 60 has been the subject of a LTM program since approximately 1998. Site groundwater monitoring wells are sampled triennially (once every three years) for measurement of field parameters and laboratory analysis of metals. LUCs have not been officially implemented at SWMU 60; however, annual inspections are conducted to assess the integrity of the soil and grass cover.

PREVIOUS INVESTIGATIONS

Installation Restoration Program Phase II

SWMU 60, in conjunction with SWMUs 53 and 71, was investigated in 1985. Groundwater monitoring wells were installed and sampled along with surface water and sediment sampling and analysis. Results indicated detections of both organic and inorganic compounds (SAIC, 1986). Based on the analytical data, a final technical document to support NFA at the site was prepared. Upon review of the NFA document, Region 4 of the USEPA and SCDHEC determined that insufficient data was provided to justify NFA.

Phase I RFI

In 1994, a Phase I RFI was conducted at SWMUs 53, 60, and 73. The report documented field activities and summarized previous investigations. The RFI field activities included collection of soil and groundwater samples. Soil samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls, and total petroleum hydrocarbons (TPH); groundwater samples were analyzed for VOCs, SVOCs, polynuclear aromatic hydrocarbons (PAHs), VOCs, inorganics, and TPH. Only metals were detected in site groundwater; chromium exceeded the state maximum contaminant level (MCL) (0.05 mg/L) in Z1-1 (0.087 mg/L) and Z1-6 (0.268 mg/L) and nickel exceeded the federal MCL (0.1 mg/L) in Z1-6 (0.116 mg/L). Risk assessment results indicated no unacceptable risk to potential receptors. Based on the results from the RFI, Halliburton NUS Corporation proposed NFA for site soils with groundwater monitoring and continued maintenance of the area's vegetated cover, which acted to increase evapotranspiration and runoff of precipitation (Halliburton NUS Corporation, 1995).

Additional Monitoring

Groundwater monitoring was initiated at SWMU 60 in 1998. Laboratory analytical results from periodic groundwater monitoring events since March 2004 have identified manganese and molybdenum as the site COPCs, because they have exceeded their HHSLs. Periodic monitoring continues in an attempt to evaluate if metal COPCs are migrating and decreasing or increasing in concentrations.

Waste Delineation

In 2006, a waste delineation assessment was performed to identify the limits of the waste at SWMU 60. The assessment used electromagnetic and ground penetrating radar surveys, supplemented by numerous test pits, to evaluate the extent of the former hardfill (Tetra Tech NUS, Inc., 2007b). The results of this assessment have since been used to show the approximate boundaries of SWMU 60 (see **Figure 2**).

Phase II RFI

Investigation data collected during the 2007 Phase II RFI suggested the north-flowing component of groundwater was possibly discharging into Runway Creek, located approximately 100 feet north of the site boundary (**Figure 2**). The Air Force decided to install groundwater monitoring well Z1-08 between the hardfill boundary and Runway Creek (see **Figure 2**). The well was intended to monitor shallow groundwater beneath the site, and monitor the same hydrogeologic units as the existing Zone 1 wells. The newly installed well was sampled and analyzed for metals; no concentrations exceeded their screening criteria. Human health and screening level ecological risk assessments were conducted as part of the Phase II RFI. Results indicated no significant impact to human health and minimal risk to ecological receptors. The Phase II RFI recommended LUCs for SWMU 60 to minimize potential risk from waste left in place (Tetra Tech NUS, Inc., 2007a).

Phase III RFI

In 2014, a Phase III RFI was performed to resolve data gaps at SWMU 60. The investigation activities included installation of two additional groundwater monitoring wells located hydraulically cross-gradient and downgradient of Z1-01 to further delineate groundwater impacts. One round of groundwater sampling was conducted during September 2014 following installation of the two new wells; the two new and five existing wells were sampled and analyzed for metals. The results of the 2014 monitoring well sampling event indicated manganese and molybdenum concentrations exceeded their HHSLs. Specifically, monitoring wells Z1-01, Z1-03R, Z1-04R, Z1-08, and Z1-10 exhibited estimated detections (J) of molybdenum at 22.4 J micrograms per liter (µg/L), 36.5 J µg/L, 30.5 J µg/L, 45.4 J µg/L, and 20.4 J µg/L, respectively. The HHSL for molybdenum is 10 µg/L, based on a USEPA Regional Screening Level (RSL) with a conservative hazard quotient (HQ) of 0.1. Results from monitoring wells Z1-06RA, Z1-10, and Z1-11 indicated detections of manganese at 1,180 µg/L, 1,310 µg/L and 1,180 µg/L, respectively. The established Base background concentration for manganese is 646.6 µg/L (SCDHEC, May 15, 2000). A risk screening was conducted during the Phase III RFI and results confirmed 2007 Phase II RFI risk assessment results (Tetra Tech NUS, Inc., 2007a); levels of manganese and molybdenum in the groundwater would not allow unlimited use and unrestricted exposure without yielding unacceptable risk. Therefore, the Phase III RFI Report recommended that a Focused CMS be conducted (URS, 2015). SCDHEC agreed with the recommendation to proceed with a Focused CMS in a letter dated July 16, 2015.

Focused CMS

A Focused CMS was prepared for SWMU 60 that evaluated presumptive remedial alternatives that serve to protect human health and the environment, support preparation of a SoB, and support implementation of a final remedy. The alternatives evaluated included no action and LTM with LUCs; LTM with LUCs was selected as the proposed remedy. In a letter dated December 7, 2016, SCDHEC concurred with LTM with LUCs as the proposed remedy.

SUMMARY OF SITE RISKS

Based on the findings presented in the Phase III RFI Report (URS, 2015), COPCs in groundwater at SWMU 60 were identified as manganese and molybdenum because concentrations exceeded their HHSL. A HHSL is a RSL adjusted to a HQ of 0.1 for screening purposes. A HQ is a method of estimating if a particular constituent contributes to an unacceptable risk when multiple contaminants are present. A HQ under 1 generally indicates that the constituent at the site does not unacceptably exhibit a risk to humans. The calculated (unadjusted) HQ based on the measured well concentrations is 0.1.

Manganese was detected above the Base-wide background concentration (SCDHEC, May 15, 2000) and HHSL in three wells during the September 2014 groundwater sampling event. The manganese HHSL (50 µg/L) is based on a secondary drinking water MCL (USEPA, 2016). National Secondary Drinking Water Regulations are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. However, there is also a USEPA RSL (non-diet) for manganese (43 µg/L) equivalent to a non-carcinogenic HQ of 0.1. The unadjusted HHSL based on an HQ of 1 is 430 µg/L. Potential hazard attributable to manganese using the maximum detected concentration can be calculated as:

$$\text{Maximum Detected Concentration} / \text{RSL (unadjusted)} = \text{Hazard Quotient (HQ)}$$

Using a maximum detected concentration of 1,310 µg/L, the above equation yields a HQ of 3.0.

Analytical results from the September 2014 sampling event indicated molybdenum concentrations exceeded the HHSL in five wells with the highest concentration in Z1-08 (45.4 J µg/L). The molybdenum HHSL is based on an adjusted RSL (10 µg/L) equivalent to a non-carcinogenic HQ of 0.1. The unadjusted HHSL based on an HQ of 1 is 100 µg/L. Using an approach similar to that for manganese results in a HQ of 0.5.

Based on the shallow depth to groundwater at SWMU 60, it is possible that a potential future construction worker could be exposed to groundwater while performing excavation activities. This was further evaluated using USEPA's online RSL Calculator[1]. The resultant calculated site-specific RSLs for a construction/excavation worker scenario exposed to groundwater are:

- Manganese – 2,560 µg/L
- Molybdenum – 1,370 µg/L

[1] http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

Using the maximum detected concentrations of manganese and molybdenum, the resultant HQs using the ratio approach described above (exposure divided by the RSL) were 0.5 and 0.03 respectively, for a construction/excavation worker exposed to groundwater. The sum of the HQs (i.e., the hazard index [HI]) is equal to 0.5, which is below a level of concern for a potential future construction excavation worker scenario.

Exceedances of HHSs for manganese and molybdenum in groundwater have occurred during the period since the 2007 risk assessment was completed. The more recent data do not alter the conclusions of the 2007 risk assessment, that contamination present at SWMU 60 did not pose a significant impact to human health, under current and foreseeable land use, or the environment (Tetra Tech NUS, 2007a). Groundwater at SWMU 60 is not used, nor is it projected to be used, as a drinking water source in the foreseeable future, thereby representing an incomplete exposure pathway (Note: Per SCDHEC Regulation R.61-68.H, all South Carolina groundwater is classified Class GB and is considered to be a potential source of drinking water).

An ecological risk assessment at SWMU 60 was conducted during the Phase II RFI (Tetra Tech NUS, Inc., 2007a) that concluded risks to ecological receptors were minimal. Additional groundwater data have been collected at SWMU 60 as part of ongoing LTM and Phase III RFI activities. Consistent with the Phase II RFI report, groundwater remains an incomplete exposure pathway and risks to ecological receptors are expected to remain minimal as stated in the original screening level ecological risk assessment (Tetra Tech NUS, Inc., 2007a).

DESCRIPTION OF ALTERNATIVES

The Phase III RFI Report for SWMU 60 identified manganese and molybdenum in groundwater as the only COPCs (URS, 2015). Because waste remains in place, and there is a concern that waste could affect future metals concentrations in groundwater, the following actions were evaluated in the Focused CMS (URS, 2016):

- Alternative 1 - No Action
- Alternative 2 – LTM with LUCs

Detailed information for each alternative evaluated is provided in the Final Focused CMS for SWMU 60 – OT011 – Hardfill Area No. 3 (URS, 2016) and summarized below.

Alternative 1 – No Action

The No Action alternative provides a basis for comparing existing site conditions with those resulting from the implementation of the other alternatives considered.

Effectiveness

This alternative results in no additional risk reduction at the site. Under the No Action alternative, reduction in constituent concentrations may be achieved through mechanical dispersion and molecular diffusion, but under a No Action alternative this would not be confirmed or evaluated because monitoring would not be performed. The decrease in concentrations is not monitored or documented, making it impossible to determine when remediation goals have been met or whether site conditions have changed. The presence of waste left in place and metals concentrations exceeding HHSs make this alternative ineffective.

Implementability

This alternative is technically and administratively implementable as no engineering or administrative procedures are required. No capital expenditures or operation and maintenance costs are associated with the No Action alternative.

Alternative 2 –LTM with LUCs

LUCs refer to a broad range of either institutional or engineering controls of the property. LUCs can include institutional controls such as governmental controls, proprietary controls, informational devices, or

active land or construction management by the property owner. LUCs can include engineering controls such as site controls and land maintenance.

Institutional controls are typically implemented by the 628 Civil Engineering Squadron Base Community Planner (Base Community Planner) and may include permitting and long term Base master planning.

Active land or construction management controls include the specification of protocols for projects planned to occur within the boundaries of a site while under control of the property owner. At the Base, the Restoration Program Manager (RPM) will review any project plans that may disturb the selected area evaluated. This review will take place prior to proceeding with any new construction or maintenance activity. The review is initiated when the JBCA Civil Engineering Squadron processes a dig permit where the RPM is one of the required approvers. If land disturbing activities impact an ERP site, the RPM will contact SCDHEC for notification/concurrence as specified in the Permit. The RPM will also review plans for projects located at a site to determine if additional protections are needed for construction workers or the surrounding environment. In addition, the development and implementation of a health and safety program may be required for activities taking place at a site.

The implementation of engineering controls includes barriers, such as the existing fence, to prevent access to a site. Vegetative control devices may be used as an alternative barrier to a specific media of concern such as the use of existing grass cover to limit exposure and/or transport of soils.

LTM activities may include the inspection of in-place control devices at a site or periodic sentinel groundwater monitoring to confirm the assumptions of the risk assessment and the resulting conceptual site model (CSM) are still intact.

Effectiveness

LUCs prevent exposure to the site by limiting the ability of people to gain access to the site, thus minimizing or preventing contact with COPCs. LUCs do not directly provide on-site restoration, but could reduce the potential for human exposure by preventing land use that could result in exposure to impacted soil and/or groundwater. Since JBCA is an actively managed facility with environmental management, LUCs such as construction permitting reviews, identification of potentially impacted areas, and periodic inspections by JBCA personnel can be very effective at minimizing or eliminating personnel contact with impacted areas of the installation. LUCs such as a vegetative cover and monitoring of the subsurface groundwater are currently in place and have proven to be effective for both JBCA personnel and the general public.

Implementability

LUCs are either already in place or planned at the site as follows:

- Vegetative cover
- Land use restrictions (i.e., no residential, commercial, or industrial development and use of groundwater), through the Base Community Planner
- Construction management review and planning, including construction permitting reviews, dig permits, and identification of impacted areas by logging the area boundaries into the Base geographic information system
- Environmental management reviews, including annual hardfill cover inspections and maintenance activities

EVALUATION OF ALTERNATIVES AND SELECTION OF THE PROPOSED REMEDY

A summary of the evaluation for the above-referenced alternative scenarios, including estimated costs, are presented on **Table 1**.

The proposed selected Final Remedy at the site is implementation of an LTM program very similar to what is already performed at the site. The specific program includes LTM with LUCs:

- LUC No. 1: Logging the property boundaries (inclusive of all polygon coordinates) into the Base geographic information system to officially identify the site as being impacted and to prompt RPM reviews of any proposed disturbance or new use of the site. The review is initiated when the JBCA Civil Engineering Squadron processes a dig permit where the RPM is one of the required approvers. If land disturbing activities impact an ERP site, the RPM will contact SCDHEC for notification/concurrence as specified in the Permit.

- LUC No. 2: Continuing annual hardfill cover/cap inspections and maintenance of necessary items such as erosion and removal of nuisance trees. Identified exposed debris will also be covered with soil contained within the areal extent of SWMU 60. General surface conditions will be restored such that it promotes good drainage, including the cover soil source area.
- Performance of groundwater monitoring at the SCDHEC-required frequency, which is currently on a triennial basis. The current sampling network consists of wells Z1-01, Z1-3R, Z1-04R, Z1-06RA, Z1-07R, Z1-08, Z1-10 and Z1-11. The groundwater monitoring wells will be analyzed for Target Analyte List metals, currently including aluminum, antimony, arsenic, barium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, strontium, thallium, tin, titanium, vanadium, and zinc. This list includes metals (molybdenum and manganese) that have exceeded their screening criteria. The purpose of the sentinel monitoring is to provide assurance that releases from the hardfill not identified during the RFI do not adversely affect the CSM and alter the assumptions made during the baseline risk assessment thereby potentially introducing an unacceptable risk to human health or the environment. Assumptions include that Runway 15/33 will remain active, thereby not changing site land use; groundwater will remain an incomplete exposure pathway because it is not projected to be used as a drinking water source; vapor intrusion from impacted groundwater will remain an incomplete pathway because metals are not volatile; and potential receptors will continue to consist of construction workers with the potential to come into contact with impacted groundwater during excavation activities. Periodic groundwater analytical results will be evaluated using screening criteria in place at the time of each sampling event to assess remedy effectiveness. Since there currently is 10 years' worth of data to show plume stability, the eventual monitoring frequency should be evaluated for reductions. A Corrective Measures Implementation (CMI) Work Plan will be developed to articulate the exact monitoring schedule. CMI Progress Reports (i.e., LTM Report) will recommend future reductions, including removal of particular analytic suite, etc., for SCDHEC approval. The recommendations will be based on the collection of sufficient data over time to justify the reductions.
- At a minimum, a yearly report will be submitted summarizing the field events that took place at the site during that year. In some cases it may be an inspection letter/report. In other cases it will also include the reporting of groundwater samples collected and analyzed. The report will also discuss if there has been a Change in Land Use during the reporting period.
- The selected remedy will be re-evaluated in a Revised CMI Work Plan if the selected remedy is judged to be ineffective, such as new constituents are identified at concentrations posing a risk to human health and the environment and/or the groundwater contamination migrates across the Base property boundary.

STATUTORY AUTHORITY

This document is being issued pursuant to Section 44-56-10 et seq. Regulation 61-79 of the 1976 South Carolina Code of Laws, as amended. The JBCA Corrective Action Program is conducted under the authority of Sections 3004 (u), 3004 (v), 3005(c)(3), 3008(h), 3013, 6001, and 7703 of RCRA (42 United States Code 6901 et seq.) as amended by the Hazardous and Solid Waste Amendment of 1984 (Pub. L. No. 98-616, 98 Stat. 3221) and the Federal Compliance Act of 1992 (Pub. L. J02-386, J06 Stat. 1505). This SoB is part of the corrective action process and is a requirement of RCRA Part B Permit # SC8 170 022 620, issued to JBCA by SCDHEC.

References

- Halliburton NUS Corporation, 1995. Installation Restoration Program (IRP) Draft RCRA Facility Investigation Report for Charleston Air Force Base, South Carolina, June 1995.
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- South Carolina Department of Health and Environmental Control, 2015. Approval Letter from SCDHEC to JBCA for the Final Phase III RFI Report dated July 16, 2015.
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- USEPA. 2016. Secondary Drinking Water Standards: Guidance for Nuisance Chemicals. Available at <https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance- nuisance-chemicals>. Accessed June, 2016.

FIGURES

TABLE